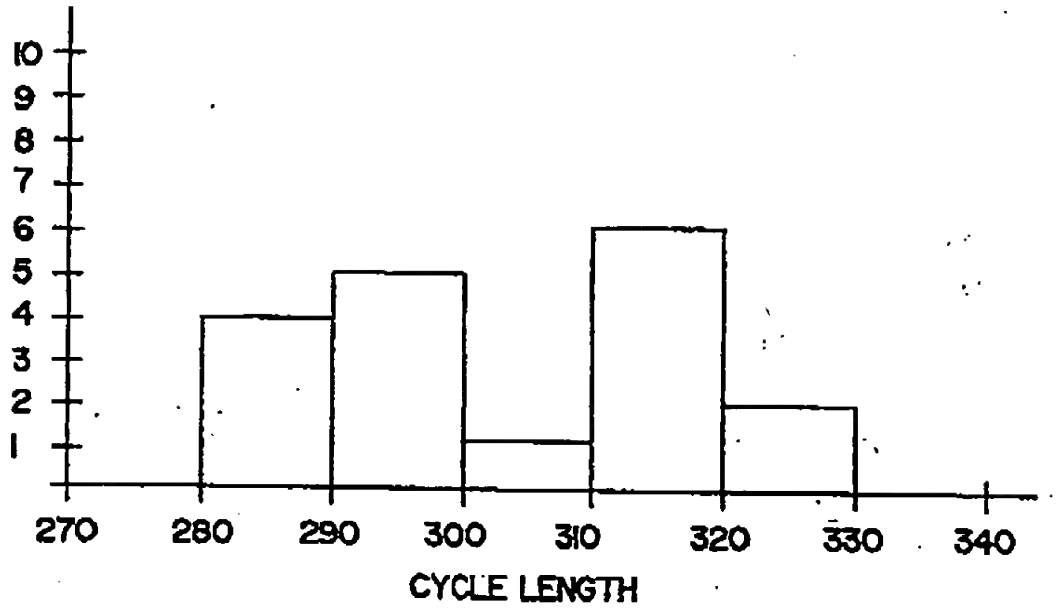

FIG. 1

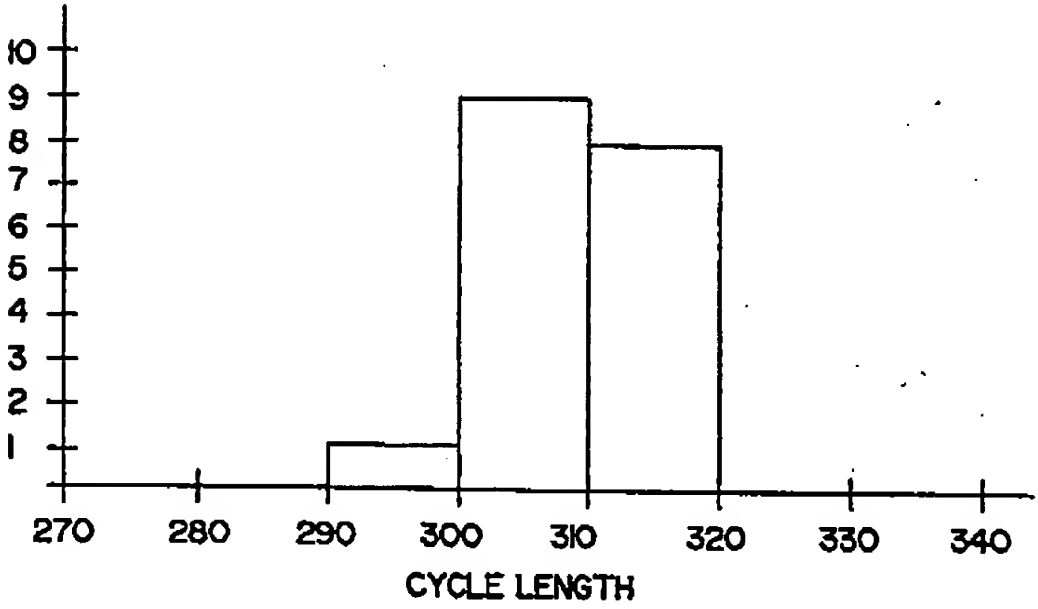

FIG. 2

FIG. 3

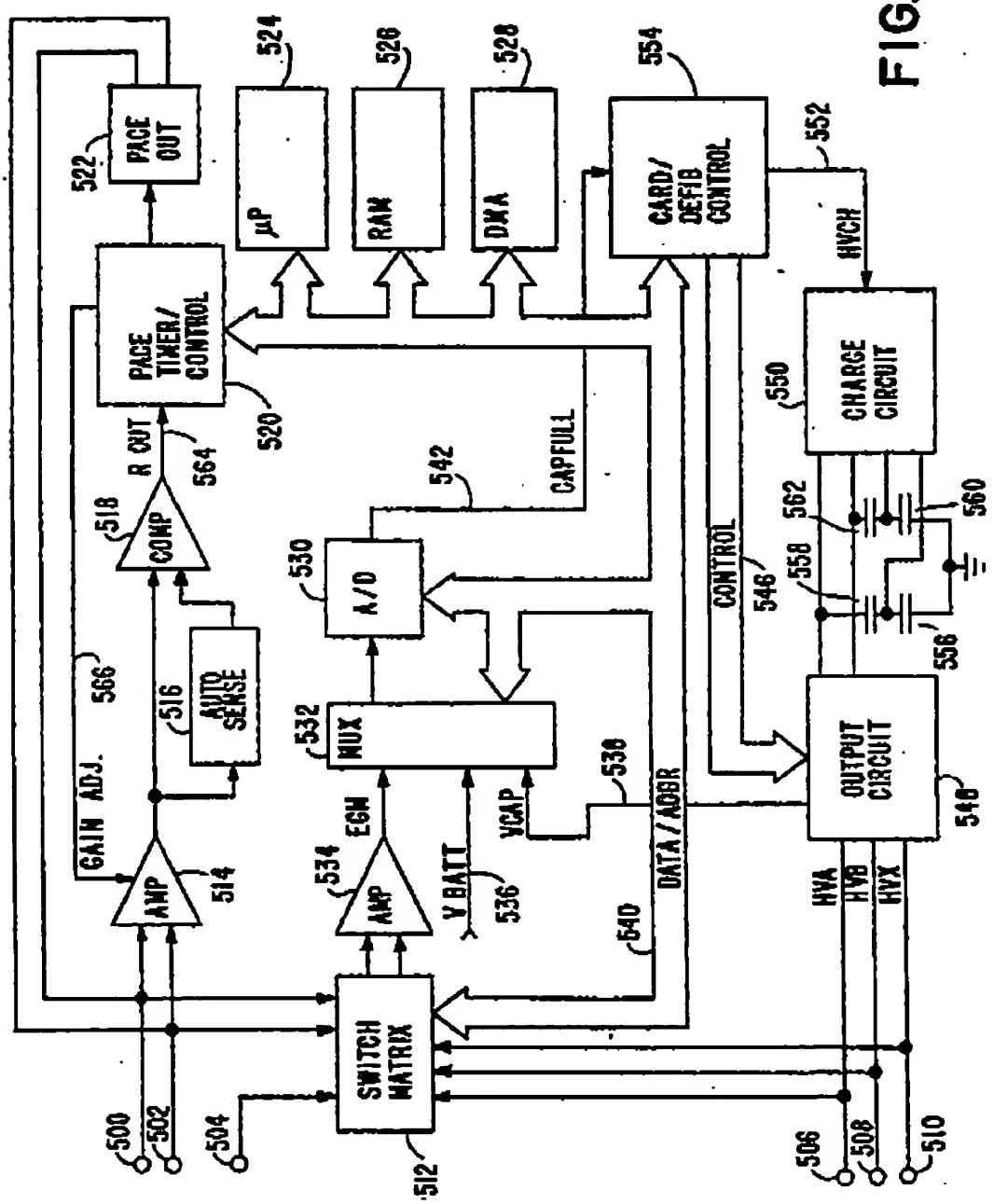
PACE OUT
522
µP
524
RAM
526
DMA
528
CARD/ DEFIB CONTROL
554
552
HVCH
PACE TIMER/ CONTROL
520
CHARGE CIRCUIT
550
R OUT
564
CAPFULL
542
562
560
518
COMP
530
A/D
CONTROL
546
558
556
516
AUTO SENSE
566
GAIN ADJ.
532
MUX
538
OUTPUT CIRCUIT
548
EGM
534
VCAP
V BATT
536
DATA / ADDR
540
HVA
HVB
HVX
514
AMP
AMP
SWITCH MATRIX
512
500
502
504
506
508
510

FIG. 4

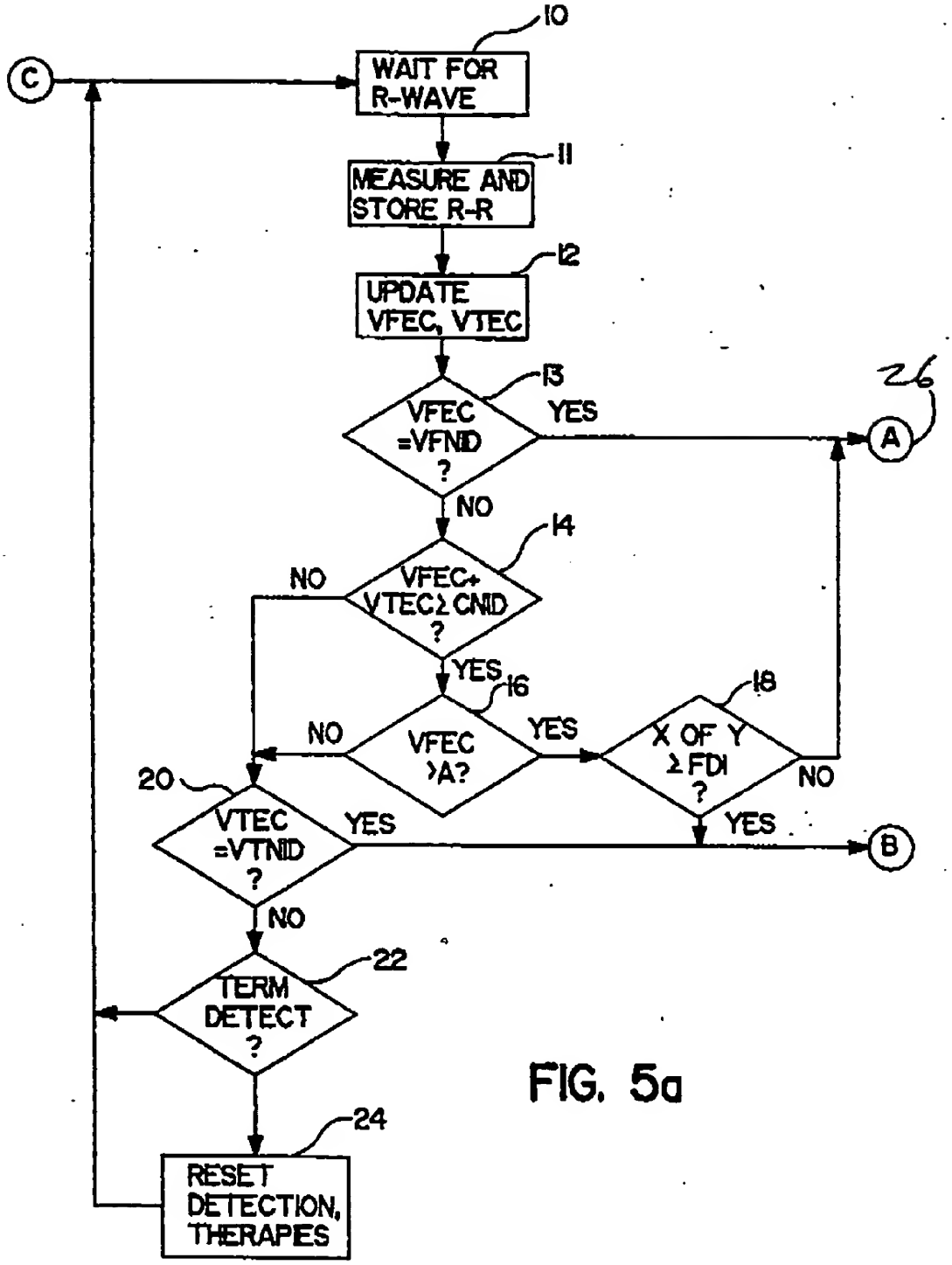
C
10
WAIT FOR R-WAVE
11
MEASURE AND STORE R-R
12
UPDATE VFEC, VTEC
13
VFEC =VFNID ?
YES
26
A
NO
14
NO
VFEC+ VTEC≥ CNID ?
YES
16
NO
VFEC >A?
YES
18
X OF Y ≥ FDI ?
NO
20
VTEC =VTNID ?
YES
YES
B
NO
22
TERM DETECT ?
24
RESET DETECTION, THERAPIES

FIG. 5a

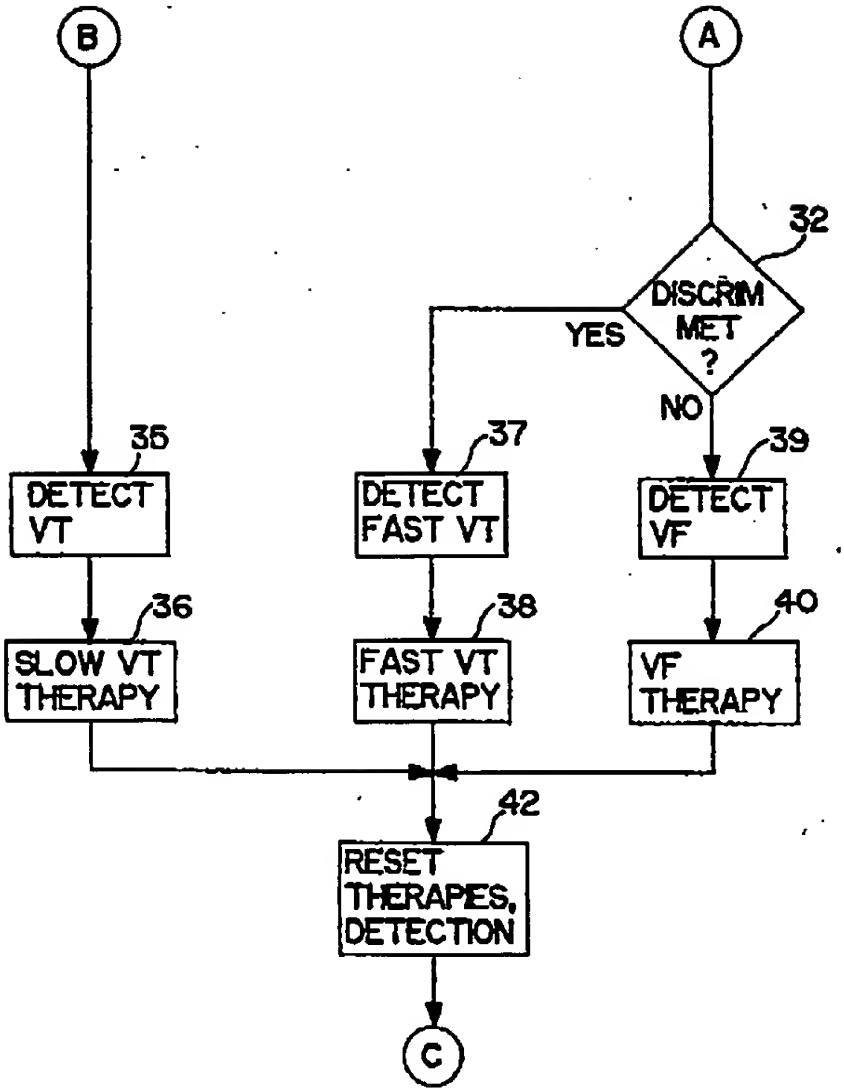
B
A
32
DISCRIM MET ?
YES
NO
35
DETECT VT
37
DETECT FAST VT
39
DETECT VF
36
SLOW VT THERAPY
38
FAST VT THERAPY
40
VF THERAPY
42
RESET THERAPIES, DETECTION
C

FIG. 5b

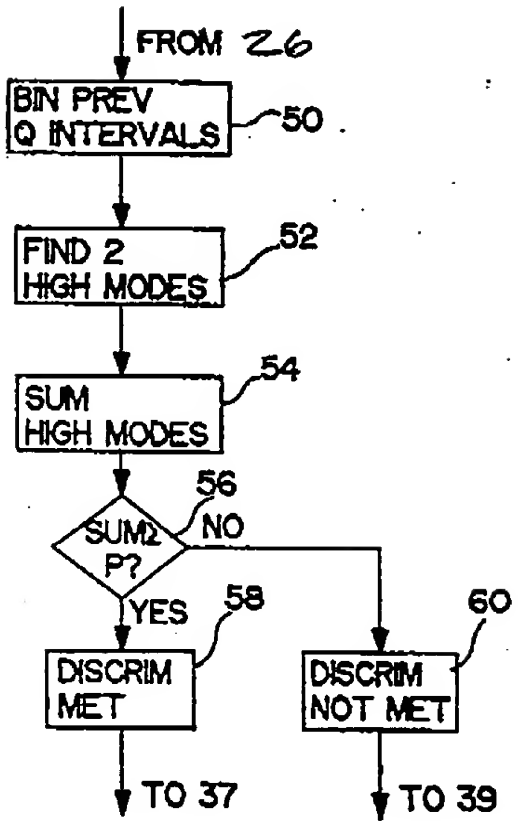
FROM 26
BIN PREV Q INTERVALS
50
FIND 2 HIGH MODES
52
SUM HIGH MODES
54
SUMΣ P?
56
NO
YES
58
60
DISCRIM MET
DISCRIM NOT MET
TO 37
TO 39

FIG. 5c

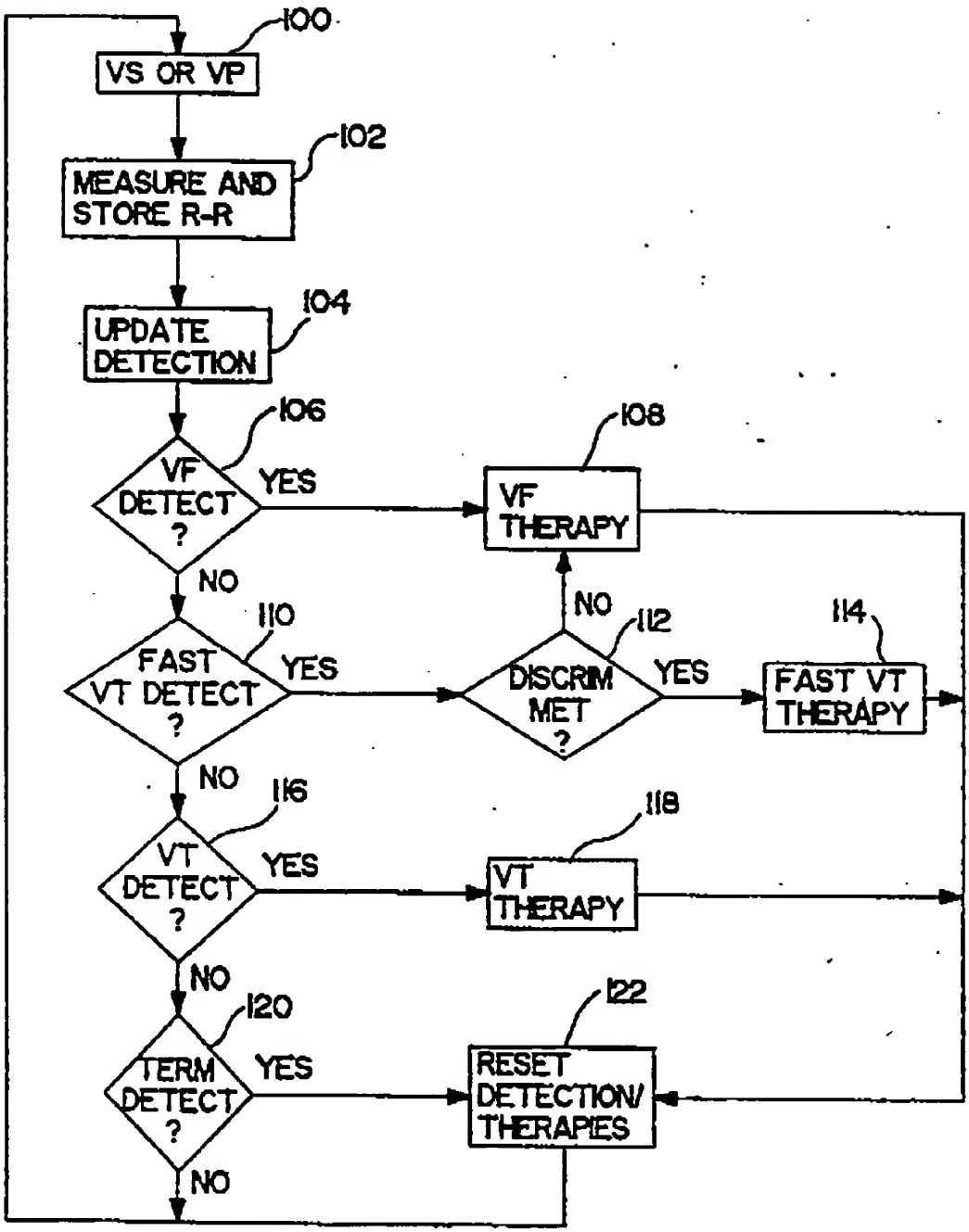
100
VS OR VP
102
MEASURE AND STORE R-R
104
UPDATE DETECTION
106
VF DETECT ?
YES
108
VF THERAPY
NO
110
FAST VT DETECT ?
YES
NO
112
DISCRIM MET ?
YES
114
FAST VT THERAPY
NO
116
VT DETECT ?
YES
118
VT THERAPY
NO
120
TERM DETECT ?
YES
122
RESET DETECTION/ THERAPIES
NO

FIG. 6

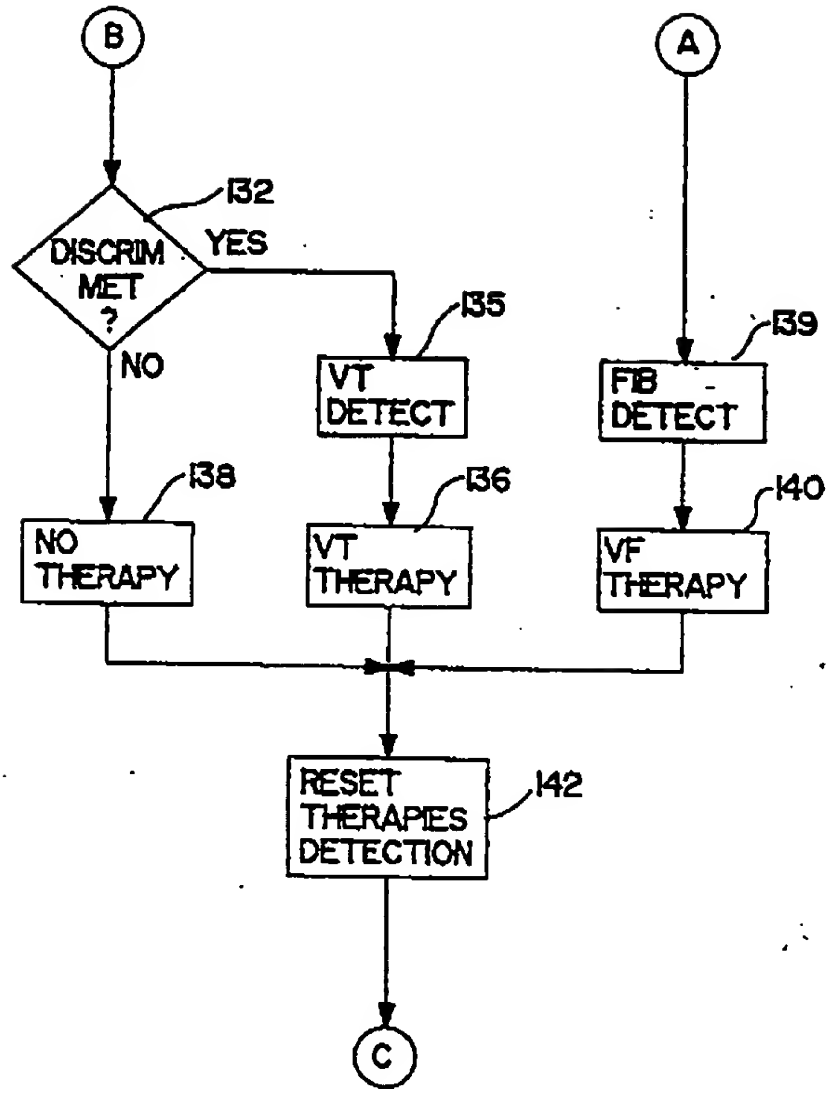
B
A
132
DISCRIM MET ?
YES
NO
135
VT DETECT
139
FIB - DETECT
138
NO THERAPY
136
VT THERAPY
140
VF THERAPY
142
RESET THERAPIES DETECTION
C

FIG. 7

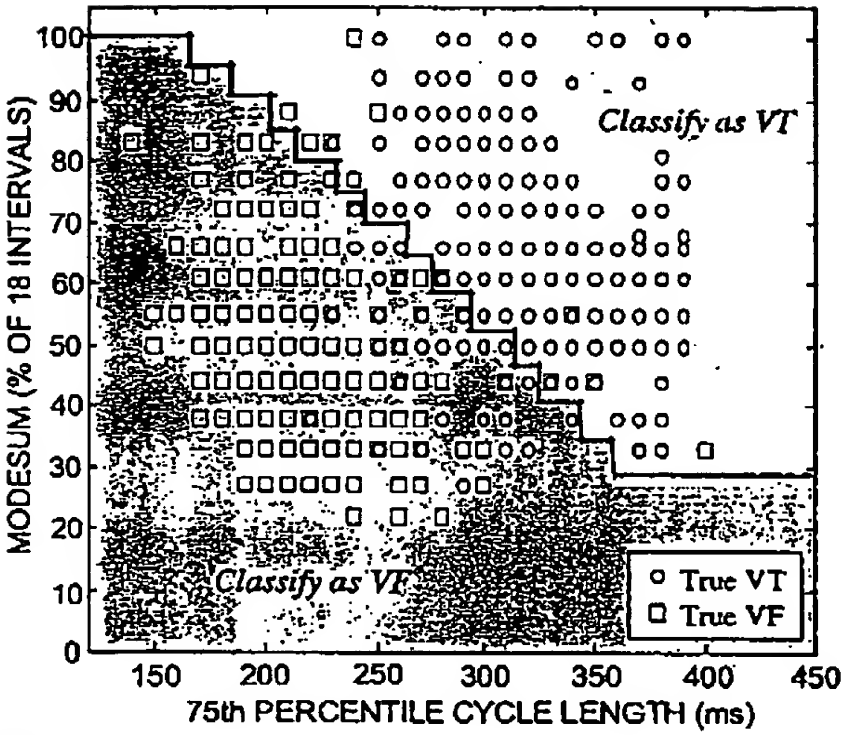

Figure 8a: A scatterplot of arrhythmias from the Performance Evaluation Database and the performance of the New Discriminator for the case with the minimum short interval threshold (120 ms).

Fig. 8(a)

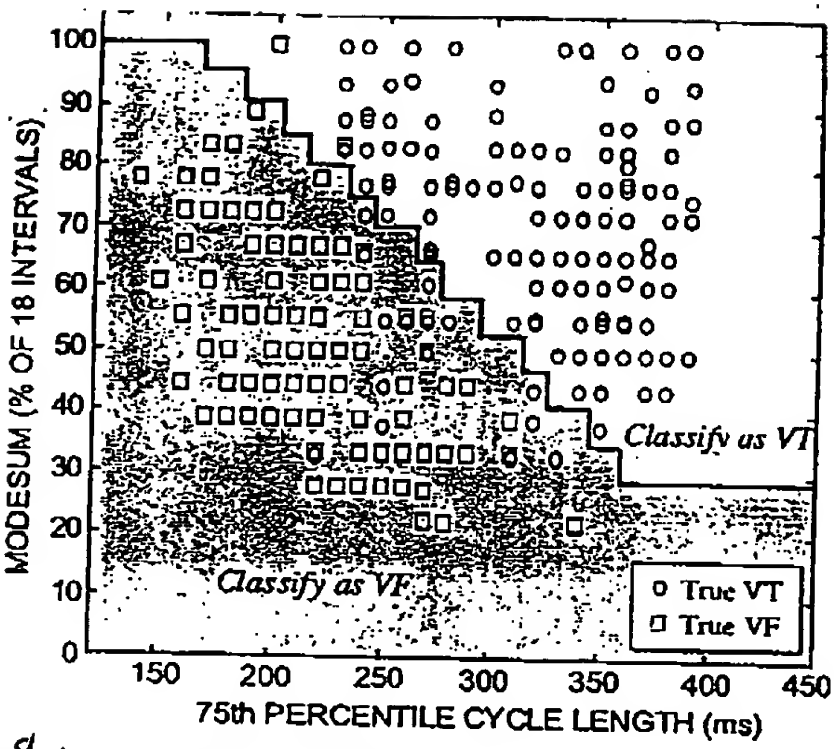

Figure 8A A scatterplot of arrhythmias from Algorithm Development Database and the design of the New Discriminator for the case with the minimum short interval threshold (120 ms).

Figure 8(b)

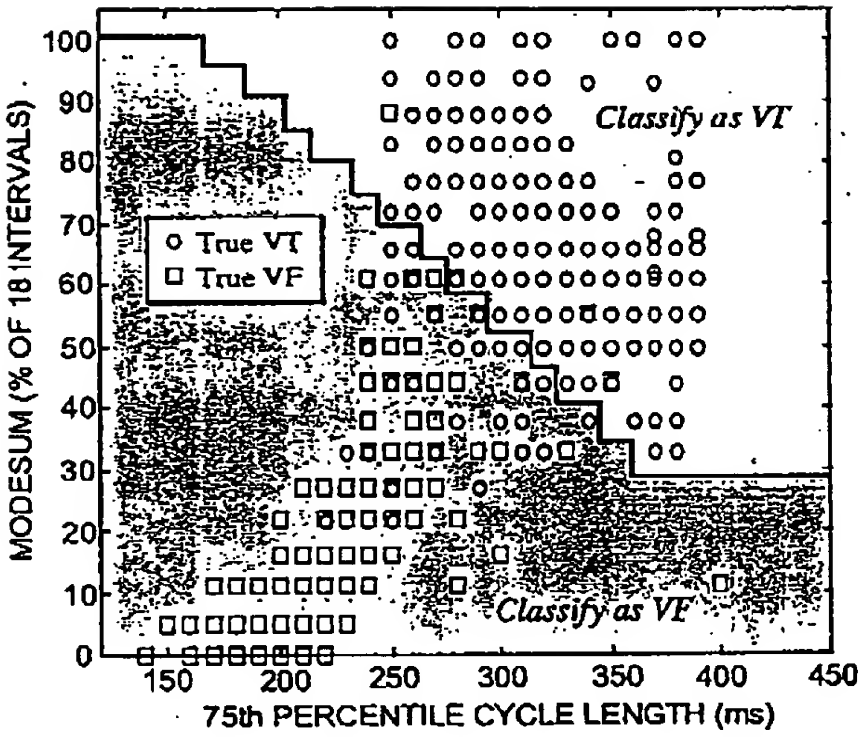

Figure 8c: Performance of New Discriminator on the Performance Evaluation Database when the short interval threshold was 240 ms.

Figure 8(c)